## REMARKS

Applicant appreciates the Examiner's attention to this application.

This response amends the specification in consideration of formalistic issues, such as correction of a reference number. This response also cancels claim 12 and amends claims 1-5, 7-10, 13-21, and 23-26. Claims 1 and 10 are the pending independent claims. Reconsideration of the present application in view of the enclosed amendments and remarks is respectfully requested.

## ARGUMENT

The Office Action includes rejections based on 35 U.S.C. §§ 102(b) and 103(a). Applicant respectfully traverses those rejections.

35 U.S.C. § 102(b)

The Office Action rejects claims 1-20 and 23-30 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent no. 5,581,691 to Meichun Hsu et al. (hereinafter "Hsu"). Applicant respectfully traverses.

For a valid rejection under 35 U.S.C. § 102, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." (MPEP § 2131.01, quoting from Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)).

Hsu pertains to a method for managing workflows such as business activities that involve "multi-user computations and business processes," where the workflows may have "durations of minutes, hours, or even days" (col. 1, lines 32-55). A process managed according to Hsu proceeds from step to step, with each step receiving flow input events (FIEs) and producing flow output events (FOEs) (col. 9, lines 35-50; col. 14, lines 50-64). In addition, Hsu provides for recovery in case of system failures by saving log records pertaining to items such as FIEs and FOEs (col. 17, line 62 – col. 18, line 5).

The present invention, by contrast, pertains to a method and a system to facilitate debugging of software applications. In particular, claims 1 and 10 involve

an "evolution diagram" that is displayed for use by a developer in debugging a software system. Furthermore, claims 1 recites that the evolution diagram represents at least part of an "event database," and that the event database includes "event records" which include "identification of a component that generated the event" and a "timestamp."

The Office Action asserts that Hsu discloses (in FIG. 20 and at col. 4, lines 54-58) displaying an evolution diagram which represents at least part of such an event database. Lines 54-58 of column 4, however, appear to have nothing to do with FIG. 20, and neither FIG. 20 nor lines 54-58 of column 4 pertain to displaying an evolution diagram. Instead, lines 54-58 of column 4 pertain to a graphic interface to facilitate the process of "defining work flows," while FIG. 20 depicts the structure of the "history database." Hsu therefore does not anticipate displaying an "evolution diagram" to represent an "event database" with "event records" that include "identification of a component that generated the event" and a "timestamp."

This response also amends independent claim 10 to incorporate features from dependent claim 12, and cancels claim 12. Accordingly, claim 10 pertains to displaying an evolution diagram that includes a first element "representing a component of the software system" and a second element "representing an event generated by the component." Hsu does not disclose displaying an evolution diagram that includes such elements. Furthermore, claim 10 recites that the first and second elements are juxtaposed in the visual display to show that "the event was generated by the component." This feature also is not disclosed by Hsu.

Consequently, Hsu does not anticipate any of the pending independent claims.

35 U.S.C. § 103(a)

The Office Action rejects claims 21-22 under 35 U.S.C. § 103(a) as being unpatentable over Hsu in view of U.S. patent no. 5,819,270 to Thomas W. Malone et al. (hereinafter "Malone"). To the extent those rejections might be applied to the pending claims, Applicant respectfully traverses.

This response amends claim 20 to depend from claim 4, which depends from claim 1. Claims 21-22 depend from claim 20. As indicated above, Hsu does not anticipate claim 1.

Malone relates to a system for displaying representations of process, such as models of complex business transactions. Neither Hsu nor Malone provides a motivation to combine Hsu and Malone. Furthermore, Malone does not disclose or suggest the features of the pending claims quoted above with regard to Hsu.

Consequently, even if Hsu and Malone were to be combined, the combination would not render the pending independent claims unpatentable. In addition, the dependent claims inherently include the features of their respective parent claims. The dependent claims therefore also patentably define the present invention over Hsu and Malone.

Furthermore, the claims recite additional features that are not disclosed or suggested by Hsu or Malone. For instance, claim 4 pertains to displaying an evolution diagram with first and second display element representing first and second events, as well as a third display element "indicating a causal relationship between the first and second events." Claim 13 involves the following specific display elements: "a generally horizontal bar" representing the component of the software system, and "a generally vertical icon overlapping the generally horizontal bar" representing the event generated by that component. Claim 7 recites that "the third graphical display element comprises an arrow extending from the first graphical display element to the second graphical display element." Claim 27 involves "combining a selected sequence of events on a single component so as to form an event cluster, and then displaying the event cluster." Even if Hsu and Malone were to be combined, the combination would not disclose or suggest these features, as recited in the pending claims.

For reasons including those set forth above, the Office Action fails to make out a *prima facie* case of obviousness for any of the pending claims.

For these and other reasons, all pending claims are allowable.

## INFORMATION DISCLOSURE STATEMENTS

Enclosed please find copies of information disclosure statements (IDSs) that were filed for this application on October 8, 2001, and December 13, 2002, along with corresponding return-receipt postcards. Applicant respectfully requests confirmation that the Examiner has considered the references listed on those IDSs, since the Office Action that was faxed to us by the Examiner on June 16, 2004 did not include copies of those IDSs with initials.

## CONCLUSION

In view of the foregoing, claims 1-11 and 13-30 are all in condition for allowance.

If the Examiner has any questions, the Examiner is invited to contact the undersigned at (512) 732-3927. Early issuance of Notice of Allowance is respectfully requested.

Respectfully submitted,

Dated: 6/24/04

Michael R. Barré
Patent Attorney
Intel Americas, Inc.
Registration No. 44,023
(512) 314-0349

c/o Blakely, Sokoloff, Taylor & Zafman, LLP
12400 Wilshire Blvd.
Seventh Floor
Los Angeles, CA 90025-1026

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313 on:

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Derek S. Watson
Name of Person Mailing Correspondence

Signature 6.25.04
Date

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The stamp of the PTO hereon acknowledges receipt of the following documents in re application of Kenneth J. Hines for EVOLUTION DIAGRAMS FOR DEBUGGING DISTRIBUTED EMBEDDED SOFTWARE APPLICATIONS (Application No. 09/888,061--filed June 21, 2001):

[✓] Transmittal Letter in duplicate
[✓] Supplemental Information Disclosure Statement
[✓] Form PTO-1449, together with copies of cited references

Attorney Docket No. 10488/10:1
Date: December 13, 2002

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FORM PTO-1449 (REV. 7-80)

U.S. DEPARTMENT OF COMMERCE
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| ATTY. DOCKET NO. | APPLICATION NO. |
|---|---|
| 10488/10:1 | 09/888,061 |
| APPLICANT | |
| Kenneth J. Hines | |
| FILING DATE | GROUP |
| June 21, 2001 | 2122 |

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# INFORMATION DISCLOSURE CITATION
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## U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---|---|---|---|---|---|---|---|
| | AA | 5 4 2 8 7 8 2 | 6/27/95 | White | 395 | 650 | |
| | AB | 5 6 4 2 4 7 8 | 6/24/97 | Chen, et al. | 395 | 183.21 | |
| | AC | 5 7 2 4 5 0 8 | 3/3/98 | Harple, Jr. et al. | 395 | 200.04 | |
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## FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES | TRANSLATION NO |
|---|---|---|---|---|---|---|---|---|
| | AL | EP 0 881 568 A2 | 29.05.1998 | Europe | G06F | 9/46 | | |
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## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

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| | AR | Ken Hines and Gaetano Borriello, "A Geographically Distributed Framework for Embedded System Design and Validation," *DAC 98, June 15-19, 1998, San Francisco, CA USA*, pp. 140-145. |
| | AS | Gopalan Suresh Raj, "A Detailed Comparison of CORBA, DCOM, and Java/RMI," *Web Cornucopia*, wysiwyg://402/http://gsraj.tripod.com/misc/compare |
| | AT | "CORBA Overview," *CORBA v2.0*, July 1995, pp. 2-1 to 18-5 |

| EXAMINER | DATE CONSIDERED |
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EXAMINER: Initial if reference considered, whether or not citation is in conformation with MPEP609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (REV. 7-80)

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| | AR | Richard J. Anderson, Paul Beame, Steve Burns, et al., "Model Checking Large Software Specifications," *Sigsoft '96 California, USA*, pp. 156-166. |
| | AS | Christopher B. Borchert, "Organization and Management of Distributed Execution Event Histories For Real-Time Debugging," *IEEE*, pp. 343-345. |
| | AT | Mariano P. Consens, Masum Z. Hasan, Alberto O. Mendelzon, "Visualizing and Querying Distributed Event Traces with Hy+," *Computer Systems Research Institute, University of Toronto*, June 1994, pp. 123-141. |

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| | AR | Wentong Cai, Wendy J. Milne and Stephen J. Turner, "Graphical Views of the Behavior of Parallel Programs," *Journal of Parallel and Distributed Computing*, June 18, 1993, No. 2, Orlando, FL, USA, pp. 223-230. |
| | AS | Matthew S. Jaffe, Nancy G. Leveson, Mats P.E. Heimdahl, et al., "Software Requirements Analysis for Real-Time Process-Control Systems," *8198 IEEE Transactions on Software Engineering*, March 17, 1991, No. 3, New York, US, pp. 241-257. |
| | AT | Thomas Kunz, David J. Taylor, and James P. Black, "Poet: Target-System-Independent Visualizations of Complex Distributed Executions, *IEEE*, 1997, pp. 452-461. |

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| APPLICANT: Kenneth J. Hines | |
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| | AS | Mikhail Auguston, "Building Program Behavior Models," *Dept. of Computer Science, New Mexico State University*, pp. 19-26. |
| | AT | Stephen Edwards, Luciano Lavagno, Edward A. Lee, et al., "Design of Embedded Systems: Formal Models, Validation, and Synthesis," *Proceedings of the IEEE*, Vol. 85, No. 3, March 1997, pp. 366-389. |

EXAMINER | DATE CONSIDERED

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| 10488/10:1 | 09/888,061 |
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| | AS | Pai Chou, Ken Hines, Kurt Partridge and Gaetano Borriello, "Control Generation for Embedded Systems Based on Composition of Modal Processes," pp. 46-53. |
| | AT | Pai H. Chou and Gaetano Borriello, "Synthesis and Optimization of Coordination Controllers for Distributed Embedded Systems," pp. 410-415. |

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COPY

The stamp of the PTO hereon acknowledges receipt
of the following documents in re U.S. patent application
of **Kenneth J. Hines**, U.S. Patent Application No. 09/888,061,
filed June 21, 2001, for **EVOLUTION DIAGRAMS FOR DEBUGGING DISTRIBUTED EMBEDDED SOFTWARE APPLICATIONS:**

Transmittal letter (in duplicate)
Information Disclosure Statement
Form PTO-1449, together with copies of cited references

OIPE OCT 10 2001 PATENT & TRADEMARK OFFICE

Mailed: October 8, 2001
Docket No. 10488/10:1 US
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JUN 29 2004
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Application No.: 09/888,061
Filed: June 21, 2001
Inventor: **Kenneth J. Hines**
Title: **EVOLUTION DIAGRAMS FOR DEBUGGING DISTRIBUTED EMBEDDED SOFTWARE APPLICATIONS**
Docket No.: 10488/10:1 USA

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## CERTIFICATE OF MAILING

Date of Deposit: October 8, 2001

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO: COMMISSIONER FOR PATENTS, WASHINGTON, D.C. 20231.

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Signature

Cathy Montee
Typed or printed name of person signing certificate

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Attachments:

- [✓] Transmittal letter (in duplicate)
- [✓] Information Disclosure Statement
- [✓] Form PTO-1449, together with copies of cited references
- [✓] Return receipt postcard

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JUN 29 2004
PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Group Art Unit: 2122

**Kenneth J. Hines**

Application No. 09/888,061

Filed: June 21, 2001

For: **EVOLUTION DIAGRAMS FOR DEBUGGING DISTRIBUTED EMBEDDED SOFTWARE APPLICATIONS**

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Date: October 8, 2001

**TRANSMITTAL LETTER**

TO THE COMMISSIONER FOR PATENTS:

Enclosed for filing in the above-referenced application are the following:

[✓] Information Disclosure Statement
[✓] Form PTO-1449, together with copies of cited references
[✓] Return receipt postcard

The Commissioner is hereby authorized to charge any additional fees which may be required in connection with filing of these papers, or credit overpayment, to Account No. 19-4455. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

**Kenneth J. Hines**

By _____
Steven J. Munson
Registration No. 47,812

STOEL RIVES LLP
900 SW Fifth Avenue, Suite 2600
Portland, Oregon 97204-1268
Telephone: (503) 224-3380
Facsimile: (503) 220-2480
Attorney Docket No. 10488/10:1 USA

OIPE JC56
JUN 29 2004
PATENT & TRADEMARK OFFICE

c. [ ] After the mailing date of a final action or notice of allowance and on or before payment of an issue fee. A statement specified by 37 CFR 1.97(e) is set forth below. A petition requesting consideration of the information disclosure statement and the $130.00 petition fee set forth in 37 CFR 1.17(i) are enclosed.

2. [ ] The attorney or agent signing below hereby states that:

[ ] each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.

[ ] no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement.

3. [ ] Applicant(s) set forth below concise explanations of the relevance of each document not in the English language and/or selected document(s) in the English language.

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Respectfully submitted,

**Kenneth J. Hines**

By _____
Steven J. Munson
Registration No. 47,812

STOEL RIVES LLP
900 SW Fifth Avenue, Suite 2600
Portland, Oregon 97204-1268
Telephone: (503) 224-3380
Facsimile: (503) 220-2480
Attorney Docket No. 10488/10:1 USA

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Group Art Unit: 2122

**Kenneth J. Hines**

Application No. 09/888,061

Filed: June 21, 2001

For: **EVOLUTION DIAGRAMS FOR DEBUGGING DISTRIBUTED EMBEDDED SOFTWARE APPLICATIONS**

Date: October 8, 2001

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## INFORMATION DISCLOSURE STATEMENT

TO THE COMMISSIONER FOR PATENTS:

Pursuant to his duty of disclosure, applicant encloses a copy of the documents listed on the accompanying Form PTO-1449.

1. This information disclosure statement is being submitted:

   a. [X] Within three months of the filing date of the above-identified application or within three months of the date of entry of the national stage, or before the mailing date of the first Office action on the merits, whichever event occurs last. (No statement under 37 CFR 1.97(e) is required.)

   b. [ ] After the period set forth in paragraph 1a, but before the mailing date of either a final action or a notice of allowance. (Check box i. or ii.)

      i. [ ] A $240.00 information disclosure statement submission fee set forth in 37 CFR 1.17(p) is enclosed.

      ii. [ ] A statement specified by 37 CFR 1.97(e) is set forth below.

FORM PTO-1449 (REV. 7-80)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

| ATTY. DOCKET NO. | APPLICATION NO. |
|---|---|
| 10488/10:1 | 09/888,061 |
| APPLICANT: Kenneth J. Hines | |
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U.S. PATENT DOCUMENTS

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| | AA | 5 8 1 9 2 7 0 | 10/06/98 | Malone et al. | 707 | 7 | |

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| | AC | [Bates, 1986] Bates, P.C. (1986). *Debugging Programs in a Distributed System Environment.* Ph.D. thesis, University of Massachusetts, Amherst. |
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| | AE | [Bruegge, 1991] Bruegge, B. (1991). A Portable Platform for Distributed Event Environments. In *ACM/ONR Workshop on Parallel & Distributed Debugging,* pgs. 184-193. |
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Transmittal letter (in duplicate)
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